STATE: MONTANA
GRANT: STATEWIDE FISH HATCHERY OPERATIONS AND MAINTENANCE
GRANT #: F - 51- D – 21, Amendment #6

This amendment is requested in order to secure funding for the next funding segment. One additional hatchery (Fort Peck) has been added to the list of sites as additional state funding has become available.

PROJECT STATEMENT

A. NEED

Total angler use in Montana lakes and streams was estimated at 2.38 million angler days in 2007. Innovative management strategies supplemented by reliable sources of warm, cool and coldwater fish from hatcheries are needed to meet this demand for high quality fishing opportunities.

The wild trout resources of Montana's coldwater streams are among the best in the world. Since the early 1970s nearly all of these coldwater streams have been managed for wild trout. Most stocking into streams and rivers is for restoration of native species.

In ponds, lakes and reservoirs, hatchery-produced eggs and fish are used to provide or enhance recreational fisheries. Where there is adequate spawning habitat, appropriate species are introduced to provide naturally reproducing populations. In waters where spawning habitat is unavailable or in waters where spawning habitat or recruitment are insufficient to supply acceptable catch rates, hatchery fish are used to provide or augment sportfish populations. Where sportfish populations have been extirpated by various causes (i.e. drought, winter or summer kill, or chemical removal) hatchery fish are used to restore sportfish populations.

Montana hatcheries are crucial components in the restoration of many of Montana's native fish species. Restoration of Yellowstone and westslope cutthroat trout, redband trout, pallid sturgeon and grayling rely on Montana hatcheries for eggs and fish from captive and wild broodstocks.

At the present time eight Montana fish hatcheries are producing approximately 10 million coldwater fish annually for stocking into 752 waters statewide. Approximately 36 million warm and cool water fish are requested annually from the Miles City Fish Hatchery for stocking approximately 116 waters in Montana. Additional fish are provided by two state-run hatcheries (Murray Springs SFH and Fort Peck Hatchery) not previously funded through this Grant. A change from former grant segments is the inclusion of funding for Fort Peck Hatchery in this segment for state fiscal year (SFY2010). The demand for more hatchery product (larger fish, higher numbers and more strains) is expected to increase over the period of this Grant.

The Fisheries Division of Montana Fish, Wildlife & Parks (FWP) has primary responsibility for management of Montana's fisheries resources. The goal of the department is as follows:

"The Montana Fish, Wildlife & Parks, through its employees and citizen commission, provides for the stewardship of the fish, wildlife, parks, and recreational resources of Montana, while contributing to the quality of the life for present and future generations."

In 1999, the Fisheries Division of FWP prepared a Strategic Plan that defined the guiding principles of the Fisheries Program in Montana and which is implemented under the program's mission statement (FWP 1999):

"The mission of the Fisheries Division is to preserve, maintain, and enhance all aquatic species and their ecosystems to meet the public's demand for recreational opportunities and stewardship of aquatic wildlife. The Fisheries Program accomplishes this mission by: Implementing policies and programs that emphasize management of wild fish populations and protection and restoration of their habitats; by operating an efficient hatchery program to stock lakes and reservoirs where natural reproduction is limited or lacking, and when needed, use the hatchery program to fulfill management objectives for conservation programs; by monitoring and regulating angler harvest to maintain balanced ecosystems; and by providing and maintaining adequate public access to fisheries."

B. OBJECTIVE

The objective of this project is to operate and maintain nine state fish hatcheries to produce approximately 45 million sport fish annually for the maintenance and restoration of sport fish in approximately 836 lakes and reservoirs and approximately 23 rivers or streams throughout Montana.

C. EXPECTED RESULTS AND BENEFITS

This project provides funding for the operation and maintenance of nine state fish hatcheries that will propagate, rear and stock 46 million sport fish to meet the demand for recreational angler use of streams, lakes and reservoirs in Montana.

The nine hatcheries jointly produce and stock fish in warm, cool and cold water habitats statewide in accordance with fisheries management requests.

Sport fish produced in these hatcheries will be used to reestablish selected species in winter killed, dewatered, or rehabilitated waters; enhance populations in waters where natural recruitment is inadequate to sustain sport fisheries acceptable to anglers; distribute angling pressure that will improve the quality of angling experiences; increase the diversity of sport fishing opportunities; and re-establish native species within their historic ranges.

The hatcheries will be operated and maintained at optimum levels to ensure dependable sources and numbers of eggs and produce and distribute fish required by management biologists into waters of Montana.

Annual stocking objectives for the nine hatcheries are:

Cold water species (fish)	10 million
Warm & cool water species (fish)	36 million
TOTAL number of fish	46 million

As a significant source of contact between the public and Montana Fish, Wildlife & Parks, state hatcheries are a primary resource for informing and educating the public about fisheries issues. Many hatchery visitors do not participate in hunting and fishing and their visit to a hatchery is their only contact with FWP. Additionally a hatchery may be their only experience with fish in an

environment where they can interface with, observe and appreciate fish. Hatchery displays and personnel provide information to visitors about FWP's fish and wildlife management activities and environmental issues. Visitor centers, aquariums, living stream displays and other exhibits educate the public about hatchery history, fish culture, species diversity, limnology, aquatic ecology, environmental issues, and species adaptation and evolution. Hatcheries are also important sites for educating school and civic groups.

D. APPROACH

This project represents the joint effort of nine state-operated hatcheries. The operation and maintenance of the nine hatcheries is covered by separate jobs in the AFA. An additional job will provide for the purchase of specialty equipment.

An additional hatchery, Murray Springs Trout Hatchery near Eureka is included in the Montana Hatchery Bureau for planning purposes, but its operations and funding are not involved in this Grant.

Murray Springs Trout Hatchery is owned by the U.S. Army Corps of Engineers but is operated under contract by the State *of* Montana, FWP. Its primary activities involve the production and distribution of rainbow, cutthroat and kokanee salmon as partial mitigation for the loss of habitat associated with the impoundment *of* Lake Koocanusa by Libby Dam.

Jobs included in Grant:

Job #	Title	Location
1	Flathead Lake Salmon Hatchery	Somers
2	Washoe Park Trout Hatchery	Anaconda
3	Jocko River Trout Hatchery	Arlee
4	Giant Springs Trout Hatchery	Great Falls
5	Big Springs Trout Hatchery	Lewistown
6	Yellowstone River Trout Hatchery	Big Timber
7	Bluewater Springs Trout Hatchery	Bridger
8	Mile City Fish Hatchery	Miles City
9	Fort Peck Hatchery	Fort Peck
10	Specialty Equipment	Statewide

Job Descriptions

1. FLATHEAD LAKE SALMON HATCHERY (Somers)

Flathead Lake Salmon Hatchery is located on FWP land on the northwest shore of Flathead Lake. The primary activity of the FLSH is the collection and incubation of wild kokanee salmon eggs to meet an annual statewide kokanee requirement of approximately 2 million salmon. It shares the production and distribution of these salmon with other hatcheries. Over 1 million fry are raised and distributed annually. The hatchery is also involved with the incubation and distribution of grayling and westslope cutthroat.

2. WASHOE PARK TROUT HATCHERY (Anaconda)

Located on FWP land adjacent to the city limits of Anaconda, the main function of the WPTH is to maintain and enhance Montana's captive westslope cutthroat broodstock and supply eggs to various in-state and out-of-state agencies. Production and distribution of cutthroat are shared with other hatcheries. Annual westslope cutthroat production includes 165,000 fry, fingerlings and depleted brood. Washoe Park Trout Hatchery is also involved with the collection and incubation to the eyed stage of eggs from wild salmonid strains including rainbow trout, brown trout and grayling. These eggs are kept for in-house broodstock recruitment and production, sent to production facilities for hatching and rearing or are used in various research projects.

3. JOCKO RIVER TROUT HATCHERY (Arlee)

Located on FWP land .25 mile north of Arlee, JRTH's primary activity is to maintain the Arlee brood stock, a domestic rainbow strain. Production and distribution is shared with other hatcheries. Annual rainbow production is typically 260,000 fingerlings and 1,350 depleted brood fish.

4. GIANT SPRINGS TROUT HATCHERY (Great Falls)

Located on FWP land adjacent to Heritage Park north of Great Falls, GSTH is an FWP production facility. The annual production of 1 million fish includes five strains of trout and Chinook and kokanee salmon.

5. BIG SPRINGS TROUT HATCHERY (Lewistown)

Located seven miles south of Lewistown, BSTH is currently the largest FWP salmonid production facility. The hatchery is composed of an upper unit on land leased from the city of Lewistown and a lower unit on FWP's land. The current annual production of over 1.8 million fish includes five strains of rainbow trout, brown trout, Yellowstone cutthroat trout, grayling and kokanee salmon.

6. YELLOWSTONE RIVER TROUT HATCHERY (Big Timber)

Located on FWP property adjacent to Big Timber, YRTH's main activity is to maintain Montana's captive Yellowstone cutthroat and Big Hole river fluvial arctic grayling broodstocks and provide eggs and fish to meet fisheries management objectives. It shares production and distribution with other hatcheries. Approximately 100,000 fish are planted annually.

7. BLUEWATER SPRINGS TROUT HATCHERY (Bridger)

Located on FWP land seven miles east of Bridger, BSTH is an FWP production facility, which produces up to 1.5 million fish annually. Strains of fish produced typically include three strains of rainbows, Yellowstone cutthroat and grayling.

8. MILES CITY FISH HATCHERY (Miles City)

MCFH is located on FWP land 2 miles southwest of Miles City and is one of two FWP warm and cool water hatcheries. Annual production can include 3,000 juvenile pallid sturgeon, 35 million walleye fry and fingerlings, 350,000 northern pike fingerlings, 325,00 largemouth and smallmouth bass fingerlings, and 10,000 tiger musky fingerlings. MCFH maintains resident

largemouth and smallmouth broodstocks and is also responsible for planting local trout ponds with fish of various species raised at other facilities. MCFH also is a spawning facility for captured wild adult pallid sturgeon.

9. FORT PECK HATCHERY (Fort Peck)

FPH is located on USACOE property adjacent to the Fort Peck townsite and is one of two FWP warm and cool water hatcheries. The hatchery's annual production ability is still in development, however it is expected to include the production of up to 90,000 fingerling and 1000 yearling pallid sturgeon, 200,000 chinook salmon, 200,000 rainbow trout, 27 million walleye fry and fingerlings and 400,000 northern pike fry. FPH is responsible for the collection of eggs from wild northern pike, walleye, and chinook populations in Fort Peck Reservoir.

10. SPECIALTY EQUIPMENT

This job provides for the purchase of major equipment items (costing over $5,000) such as fish distribution vehicles, chillers and water treatment equipment with Federal Aid funds for use for hatchery related projects, including fish transportation, spawning, fish rearing, water treatment, etc.

Activities included in the Grant

The following activities are included. Detailed explanations of each are provided in the following pages.

A. Hatchery operations
   1. Administration
   2. Broodstock management
   3. Egg collection
   4. Fish production
   5. Fish distribution
   6. Wild fish egg collection and Endangered Species Act (ESA) species rearing
   7. Native Fish restoration coordination with fish managers and biologist

B. Hatchery maintenance
   1. Utilities
   2. Routine maintenance
   3. Contracted maintenance

C. Specialty equipment
   1. Fish transport tanks
   2. Fish transport trucks
   3. Isolation tanks and water treatment equipment
   4. Fish rearing tanks
   5. Tractors
   6. Pumps
   7. Backup power generators
   8. Water heating boilers

A. HATCHERY OPERATIONS

1. ADMINISTRATION

Administration includes: work performed by eight hatchery managers and their staffs; developing the annual and five-year planting programs; developing egg requirements; coordinating the use of hatchery facilities; supervising hatchery operations and activities; compiling and reporting data; developing and allocating budgets; coordinating hatchery repair; managing personnel; providing hatchery security; communicating with public agencies, department personnel and private individuals; attending professional and management meetings; participating in training workshops, applicable adult education courses and staff meetings; and taking accumulated leave.

2. BROODSTOCK MANAGEMENT

Broodstock management includes the time spent on spawning, egg incubation, adjusting water flows, providing a clean rearing environment, maintaining proper hatchery carrying capacities (measuring and inventorying fish, splitting and transferring fish). It also includes the time and cost to distribute eggs (freight and shipping containers), collect wild gametes for genetic augmentation of broodstocks, purchase feed for brood, alleviate fish health problems, and distribute retired brood and coordination with regional fish managers and biologists to maintain genetically appropriate stocks.

3. EGG COLLECTION

Egg collection includes the time and cost of collecting wild gametes, egg incubation and distribution of eggs within Montana. If needed, eggs from other agencies are imported under strict health and disease criteria.

4. FISH PRODUCTION

Fish production includes the cost of feed, chemicals and water quality testing. Included also are the time spent handling eggs, adjusting water flows, feeding fish, providing a clean rearing environments, alleviating fish health problems, and maintaining proper carrying capacities of rearing units.

Long-term fish production projections cannot be itemized by hatchery, as there are many variables that cause changes in the annual production at each facility. Major maintenance, renovation and construction projects can cause temporary disruptions in hatchery production capabilities. The species, strains, numbers and size of fish produced at each hatchery are manipulated on a bureau-wide basis to optimize the use of available production space, growth rates, water temperatures, distribution schedules and costs, and manpower to meet management goals. Management objectives change due to impacts to fish populations caused by illegal fish introductions, disease, water availability, or changes in management strategies. These changes require adjustments to hatchery production.

Fish distribution projections are based on the calendar year. Budget and reporting are based on a July 1 through June 30 state fiscal year cycle.

Species	Approx. Number	Strains
	Coldwater	
Brown trout	84,000	
Chinook salmon	200,000	Fall Chinook
Brook trout	50,000	
Cutthroat	500,000	Westslope Cutthroat Trout
Cutthroat	110,000	Yellowstone Cutthroat Trout
Golden trout	6,400	
Grayling	980,000	Adfluvial and Fluvial
Kokanee salmon	1,700,000	
Rainbow	3,400,000	Seven Strains
SUBTOTAL	7,030,400	
	Warm water	
Channel catfish	8,500	
Largemouth bass	190,000	
Smallmouth bass	141,500	
Northern pike	7,000	
Pallid sturgeon	12,000	
Walleye	40,000,000	
SUBTOTAL	40,359,000	
TOTAL	47,389,400	

5. FISH DISTRIBUTION

Weather conditions influence the timing of fish distribution, causing fluctuations in the reported numbers of fish planted within a fiscal year. This can cause a discrepancy in the numbers of fish stocked in a calendar year vs. the numbers of fish stocked in a fiscal year. Additionally, actual production can vary from planned production due to variances in weather patterns, fish survival while they are in the hatchery, and egg availability.

The type of water to be stocked and the estimated number of fish to be stocked annually are:

Type of water to be planted	Number of water
Large waters	82
Small waters	750
Rivers and streams	23
Undesignated	13
TOTAL	868

Of these, approximately 150 high mountain lakes are stocked with the use of horses or aircraft.

6. WILD FISH EGG COLLECTION

This activity is either for genetic maintenance of brood stocks or replication/restoration of native fish species. There are times that grayling, cutthroat and other species are trapped, eggs are collected and then put into isolation at one of FWP's hatcheries. All disease samples from donor populations are taken and analyzed prior to removal of any egg or fish from hatchery isolation facilities in accordance to Montana FWP's Fish Health Policy. These programs are for several different projects including but not exclusive to: whirling disease studies, reintroduction of native species of special concern, and Endangered Species programs.

7. NATIVE FISH RESTORATION COORDINATION WITH FISH MANAGERS AND BIOLOGIST

This activity includes meeting with area fish biologists, fish managers, and other agency personnel to assure that activities and hatchery production meet native fish restoration and management goals. Also included is coordinating or assisting in native fish spawning and stocking operations.

B. HATCHERY MAINTENANCE

Hatchery maintenance includes the maintenance of buildings and grounds; incubation and rearing units; water collection, distribution and discharge systems; water treatment systems; fish distribution vehicles; specialty vehicles (> I 0,000 lbs. GVW); specialty equipment (forklifts, fish loaders, etc.); and other minor equipment.

A description of the infrastructure of each hatchery covered by this Grant are listed by hatchery in *Appendix A*.

1. UTILITIES

This includes all utilities (electricity, fuel oil, natural gas, propane, water and sewage, and garbage removal).

2. ROUTINE MAINTENANCE

The hatchery personnel at each facility perform routine maintenance as needed.

3. CONTRACTED MAINTENANCE

This includes all contracted maintenance of the facilities, which requires expertise or equipment not possessed by hatchery personnel or maintenance that cannot be completed by hatchery personnel due to schedule or workload.

C. SPECIALTY EQUIPMENT

This job will provide for the purchase of major equipment needed to meet hatchery operation requirements. Specialty equipment may include, but not be limited to, fish distribution vehicles and tanks, fish loaders, water chillers, and water treatment equipment. These items will be used to produce or deliver fish to waters open to public fishing.

D. ESTIMATED COSTS for SFY2010

The following is a summary of estimated personal services and O&M direct costs for each job listed in this Grant.

Job #	Hatchery	Personal Services	O&M	Total
1	Flathead Lake Salmon Hatchery	$117,944	$50,000	$167,944
2	Washoe Park Trout Hatchery	$177,413	$74,951	$252,364
3	Jocko River Trout Hatchery	$174,457	$66,100	$240,557
4	Giant Springs Trout Hatchery	$170,528	$127,500	$298,028
5	Big Springs Trout Hatchery	$300,954	$290,909	$591,863
6	Yellowstone River Trout Hatchery	$107,540	$49,500	$157,040
7	Bluewater Springs Trout Hatchery	$162,399	$109,101	$271,500
8	Miles City Fish Hatchery	$208,876	$199,501	$408,377
9	Fort Peck Hatchery	$106,667		$106,667
10	Specialty Equipment			$70,000
	Totals	$1,526,778	$967,562	**$2,564,340**

The following is a summary of total direct and indirect costs for this Grant Amendment. The budget includes $70,000 for major equipment for which no indirect costs are charged. An estimate of $1500 in program income has been deducted from the requested budget amount.

	Federal Share		State Share		Totals
Direct Costs	$1,870,755		$623,585		$2,494,340
Est. Program Income	-$1,125		-$375		-$1,500
Subtotals	$1,869,630		$623,210		$2,492,840
Indirect @ 19.05%	$356,164		$118,722		$474,886
Equipment	$52,500		$17,500		$70,000
Totals	**$2,278,294**	75.0%	**$759,432**	25.0%	**$3,037,726**

E. LOCATION

The fish produced will be distributed statewide.

Descriptions of the locations of the ten jobs funded with Federal Aid are listed below.

Job 1: Flathead Lake Salmon Hatchery and Kokanee Enhancement are located in Flathead County, 2 miles southwest of Somers, adjacent to Flathead Lake.

Job 2: Washoe Park Trout Hatchery is located in Deer Lodge County, in Anaconda, adjacent to Warm Springs Creek. On 4.82 acres, T4N, RIIW, Section 3.

Job 3: Jocko River Trout hatchery is located in Lake County, north of Arlee, adjacent to the Jocko River. On 60.24 acres in T16N, R20W, Section 1.

Job 4: Giant Springs Trout Hatchery is located in Cascade County, northeast of great Falls, adjacent to the Missouri River. On 8.35 acres in T21N, R4E, Section 33.

Job 5: Big Springs Trout Hatchery is located in Fergus County, 7 miles south of Lewistown, adjacent to Big Springs Creek. On 26.45 acres in T14N, RI9E, Section 5.

Job 7: Bluewater Springs Trout Hatchery is located in Carbon County, 8 miles northeast of Bridger, adjacent to Bluewater Creek. On 90.30 acres in T6S, R24E, Sections 8 & 9.

Job 8: Miles City Fish Hatchery is located in Custer County, one mile west of Miles City, near the Yellowstone River. On 242.26 acres in T8N, R47E, Section 32 and T7N, R47E, Sections 4, 5,8, & 9.

Job 9: Fort Peck Hatchery is located in Valley County, adjacent to Fort Peck, Montana. On USACOE property in T26N, R41E S08.

Job 10:Specialty equipment will be used statewide.

F. SCHEDULE

USFWS review and approval of Grant	June 2009
Annual activities:	
Maintenance	Year-round
Egg collection/incubation	Year-round
Rearing	Year-round
Fish Distribution	March - January
Annual Grant Agreement	July
Annual Performance Report	September
Grant Closeout	August 2010

G. PROJECT PERSONNEL

Chris Hunter	Fisheries Division Administrator	Helena	406-444-2449
Bob Snyder	Hatchery Bureau Chief	Helena	406-444-2447
Hatchery Managers			
Mark Kornick	Flathead Lake Salmon Hatchery	Somers	406-857-3744
Mark Sweeney	Washoe Park Trout Hatchery	Anaconda	406-563-2531
George Kirsch	Jocko River Trout Hatchery	Arlee	406-726-3344
Bruce Chaney	Giant Springs Trout Hatchery	Great Falls	406-452-5734
Jim Drissell	Big Springs Trout Hatchery	Lewistown	406-538-5588
Jay Pravacek	Yellowstone Rvr Trout Hatchery	Big Timber	406-932-4434

Adam Moticak	Bluewater Springs Hatchery	Bridger	406-668-7443
Mike Rhodes	Miles City Hatchery	Miles City	406-232-4754
Charlie Bridgham	Fort Peck Hatchery	Fort Peck	406-526-3689

H. RELATION TO OTHER FEDERAL PROJECTS

F-113-R Fisheries Management Program, and Field Trials of Drugs Used in Public Fish Production F-89-R.